

Dean Jedrick Y. Lagonsin
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Feature Activity 02 Documentation

Modifying an image

apt-get update

```
root@cfb8f08dd6ce: /
C:\Users\Deanii>docker run -it ubuntu:16.04 /bin/bash
root@cfb8f08dd6ce:/# ping google.com
bash: ping: command not found
root@cfb8f08dd6ce:/# apt-get update
Get:1 http://security.ubuntu.com/ubuntu xenial-security InRelease [109 kB]
Get:2 http://archive.ubuntu.com/ubuntu xenial InRelease [247 kB]
Get:3 http://security.ubuntu.com/ubuntu xenial-security/main amd64 Packages [2051 kB]
Get:4 http://archive.ubuntu.com/ubuntu xenial-updates InRelease [109 kB]
Get:5 http://archive.ubuntu.com/ubuntu xenial-backports InRelease [107 kB]
Get:6 http://archive.ubuntu.com/ubuntu xenial/main amd64 Packages [1558 kB]
Get:7 http://security.ubuntu.com/ubuntu xenial-security/restricted amd64 Packages [15.9 kB]
Get:8 http://security.ubuntu.com/ubuntu xenial-security/universe amd64 Packages [984 kB]
Get:9 http://archive.ubuntu.com/ubuntu xenial/restricted amd64 Packages [14.1 kB]
Get:10 http://archive.ubuntu.com/ubuntu xenial/universe amd64 Packages [9827 kB]
Get:11 http://security.ubuntu.com/ubuntu xenial-security/multiverse amd64 Packages [8820 B]
Get:12 http://security.ubuntu.com/ubuntu xenial-updates/multiverse amd64 Packages [176 kB]
Get:13 http://archive.ubuntu.com/ubuntu xenial-updates/main amd64 Packages [2559 kB]
Get:14 http://archive.ubuntu.com/ubuntu xenial-updates/restricted amd64 Packages [16.4 kB]
Get:15 http://archive.ubuntu.com/ubuntu xenial-updates/universe amd64 Packages [1544 kB]
Get:16 http://archive.ubuntu.com/ubuntu xenial-updates/multiverse amd64 Packages [26.2 kB]
Get:17 http://archive.ubuntu.com/ubuntu xenial-backports/main amd64 Packages [10.9 kB]
Get:18 http://archive.ubuntu.com/ubuntu xenial-backports/universe amd64 Packages [12.7 kB]
Fetched 19.4 MB in 1min 19s (243 kB/s)
Reading package lists... Done
```

apt-get install iputils-ping

```
root@cfb8f08dd6ce: /
root@cfb8f08dd6ce:/# apt-get install iputils-ping
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libffi6 libgmp10 libgnutls-openssl27 libgnutls30 libhogweed4 libidn11 libnettle6 libp11-kit0
  libtasn1-6
Suggested packages:
  gnutls-bin
The following NEW packages will be installed:
  iputils-ping libffi6 libgmp10 libgnutls-openssl27 libgnutls30 libhogweed4 libidn11 libnettle6
  libp11-kit0 libtasn1-6
0 upgraded, 10 newly installed, 0 to remove and 5 not upgraded.
Need to get 1307 kB of archives.
After this operation, 3781 kB of additional disk space will be used.
Do you want to continue? [Y/n] Y
Get:1 http://archive.ubuntu.com/ubuntu xenial/main amd64 libgmp10 amd64 2:6.1.0+dfsg-2 [240 kB]
Get:2 http://archive.ubuntu.com/ubuntu xenial-updates/main amd64 libnettle6 amd64 3.2-1ubuntu0.16.04.2 [93.7 kB]
Get:3 http://archive.ubuntu.com/ubuntu xenial-updates/main amd64 libhogweed4 amd64 3.2-1ubuntu0.16.04.2 [136 kB]
Get:4 http://archive.ubuntu.com/ubuntu xenial-updates/main amd64 libidn11 amd64 1.32-3ubuntu1.2 [46.5 kB]
Get:5 http://archive.ubuntu.com/ubuntu xenial/main amd64 libffi6 amd64 3.2.1-4 [17.8 kB]
Get:6 http://archive.ubuntu.com/ubuntu xenial-updates/main amd64 libp11-kit0 amd64 0.23.2-5~ubuntu16.04.2 [107 kB]
Get:7 http://archive.ubuntu.com/ubuntu xenial-updates/main amd64 libtasn1-6 amd64 4.7-3ubuntu0.16.04.3 [43.5 kB]
Get:8 http://archive.ubuntu.com/ubuntu xenial-updates/main amd64 libgnutls30 amd64 3.4.10-4ubuntu1.8 [548 kB]
Get:9 http://archive.ubuntu.com/ubuntu xenial-updates/main amd64 libgnutls-openssl27 amd64 3.4.10-4ubuntu1.8 [21.9 kB]
Get:10 http://archive.ubuntu.com/ubuntu xenial/main amd64 iputils-ping amd64 3:20121221-5ubuntu2 [52.7 kB]
```

```
root@cfb8f08dd6ce: /
Fetched 1307 kB in 6s (207 kB/s)
debconf: delaying package configuration, since apt-utils is not installed
Selecting previously unselected package libgmp10:amd64.
(Reading database ... 4785 files and directories currently installed.)
Preparing to unpack .../libgmp10_2%3a6.1.0+dfsg-2_amd64.deb ...
Unpacking libgmp10:amd64 (2:6.1.0+dfsg-2) ...
Selecting previously unselected package libnettle6:amd64.
Preparing to unpack .../libnettle6_3.2-1ubuntu0.16.04.2_amd64.deb ...
Unpacking libnettle6:amd64 (3.2-1ubuntu0.16.04.2) ...
Selecting previously unselected package libhogweed4:amd64.
Preparing to unpack .../libhogweed4_3.2-1ubuntu0.16.04.2_amd64.deb ...
Unpacking libhogweed4:amd64 (3.2-1ubuntu0.16.04.2) ...
Selecting previously unselected package libidn11:amd64.
Preparing to unpack .../libidn11_1.32-3ubuntu1.2_amd64.deb ...
Unpacking libidn11:amd64 (1.32-3ubuntu1.2) ...
Selecting previously unselected package libffi6:amd64.
Preparing to unpack .../libffi6_3.2.1-4_amd64.deb ...
Unpacking libffi6:amd64 (3.2.1-4) ...
Selecting previously unselected package libp11-kit0:amd64.
Preparing to unpack .../libp11-kit0_0.23.2-5ubuntu16.04.2_amd64.deb ...
Unpacking libp11-kit0:amd64 (0.23.2-5ubuntu16.04.2) ...
Selecting previously unselected package libtasn1-6:amd64.
Preparing to unpack .../libtasn1-6_4.7-3ubuntu0.16.04.3_amd64.deb ...
Unpacking libtasn1-6:amd64 (4.7-3ubuntu0.16.04.3) ...
Selecting previously unselected package libgnutls30:amd64.
Preparing to unpack .../libgnutls30_3.4.10-4ubuntu1.8_amd64.deb ...
Unpacking libgnutls30:amd64 (3.4.10-4ubuntu1.8) ...
Selecting previously unselected package libgnutls-openssl27:amd64.
Preparing to unpack .../libgnutls-openssl27_3.4.10-4ubuntu1.8_amd64.deb ...
Unpacking libgnutls-openssl27:amd64 (3.4.10-4ubuntu1.8) ...
Selecting previously unselected package iputils-ping.
Preparing to unpack .../iputils-ping_3%3a20121221-5ubuntu2_amd64.deb ...
Unpacking iputils-ping (3:20121221-5ubuntu2) ...
Processing triggers for libc-bin (2.23-0ubuntu11.2) ...
Setting up libgmp10:amd64 (2:6.1.0+dfsg-2) ...
Setting up libnettle6:amd64 (3.2-1ubuntu0.16.04.2) ...
Setting up libhogweed4:amd64 (3.2-1ubuntu0.16.04.2) ...
Setting up libidn11:amd64 (1.32-3ubuntu1.2) ...
Setting up libffi6:amd64 (3.2.1-4) ...
Setting up libp11-kit0:amd64 (0.23.2-5ubuntu16.04.2) ...
Setting up libtasn1-6:amd64 (4.7-3ubuntu0.16.04.3) ...
Setting up libgnutls30:amd64 (3.4.10-4ubuntu1.8) ...
Setting up libgnutls-openssl27:amd64 (3.4.10-4ubuntu1.8) ...
Setting up iputils-ping (3:20121221-5ubuntu2) ...
Setcap is not installed, falling back to setuid
Processing triggers for libc-bin (2.23-0ubuntu11.2) ...
```

ping google.com

```
Command Prompt
root@cfb8f08dd6ce:/# ping google.com
PING google.com (216.58.200.78) 56(84) bytes of data:
64 bytes from 216.58.200.78: icmp_seq=1 ttl=37 time=29.5 ms
64 bytes from 216.58.200.78: icmp_seq=2 ttl=37 time=30.8 ms
64 bytes from 216.58.200.78: icmp_seq=3 ttl=37 time=29.8 ms
64 bytes from 216.58.200.78: icmp_seq=4 ttl=37 time=27.9 ms
64 bytes from 216.58.200.78: icmp_seq=5 ttl=37 time=29.8 ms
64 bytes from 216.58.200.78: icmp_seq=6 ttl=37 time=27.9 ms
64 bytes from 216.58.200.78: icmp_seq=7 ttl=37 time=44.3 ms
64 bytes from 216.58.200.78: icmp_seq=8 ttl=37 time=28.0 ms
64 bytes from 216.58.200.78: icmp_seq=9 ttl=37 time=57.9 ms
^C
--- google.com ping statistics ---
9 packets transmitted, 9 received, 0% packet loss, time 8013ms
rtt min/avg/max/mdev = 27.978/34.044/57.990/9.749 ms
root@cfb8f08dd6ce:/# exit
exit
```

Committing changes

```
C:\Users\Deanii>docker ps -a
```

CONTAINER ID	IMAGE	COMMAND	CREATED	STATUS	PORTS	NAMES
cfb8f08dd6ce	ubuntu:16.04	"/bin/bash"	18 minutes ago	Exited (0) 2 minutes ago		gracious_hermann
e79c10c356a9	ubuntu:16.04	"/bin/bash"	About an hour ago	Exited (0) About an hour ago		ecstatic_jennings
374fdc31a5df	ubuntu:16.04	"/bin/bash"	About an hour ago	Exited (0) About an hour ago		musings_pascal
8fae4adec725	ubuntu:16.04	"/bin/echo 'Hello wo...'"	About an hour ago	Exited (0) About an hour ago		heuristic_aryabhata

```
C:\Users\Deanii>docker commit -a "David Elner" -m "Added ping utility." cfb delner/ping
sha256:06132e9584da80798f8b0eb494a6e1c69eae75a041ae156fe28d1eee4e3529f6

C:\Users\Deanii>docker images
```

REPOSITORY	TAG	IMAGE ID	CREATED	SIZE
delner/ping	latest	06132e9584da	18 seconds ago	170MB
ubuntu	16.04	9ff95a467e45	3 weeks ago	135MB

```
C:\Users\Deanii>docker run -it --rm delner/ping /bin/bash
root@cef77697a2c6:/# ping google.com
PING google.com (142.250.66.110) 56(84) bytes of data.
64 bytes from 142.250.66.110: icmp_seq=1 ttl=37 time=21.5 ms
64 bytes from 142.250.66.110: icmp_seq=2 ttl=37 time=47.8 ms
64 bytes from 142.250.66.110: icmp_seq=3 ttl=37 time=24.1 ms
64 bytes from 142.250.66.110: icmp_seq=4 ttl=37 time=22.4 ms
64 bytes from 142.250.66.110: icmp_seq=5 ttl=37 time=26.1 ms
^C
--- google.com ping statistics ---
5 packets transmitted, 5 received, 0% packet loss, time 4007ms
rtt min/avg/max/mdev = 21.524/28.423/47.871/9.851 ms
root@cef77697a2c6:/#
```

*Replace single quotes with double quotes :)